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EXPORT PERFORMANCE AND EASE OF DOING BUSINESS INDEX: EVIDENCE FROM 160 COUNTRIES

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Abstract
Since 2004, there has been amazing number of research studies depicting the benefits of improving the score/rankings in the World Bank's Ease of Doing Business Index. Be it in terms of FDI or economic growth and development, the general belief is that an improved ranking or score achieved by bringing in regulatory reforms transports into increased spirit of entrepreneurship in the economy as well as various economic benefits. This study is one such study where try to find out the association between a better score on one of the parameters of the Ease of Doing Business Index, i.e. Trading across borders and the export performance of the economy. As 'Trading across borders' is directly linked to making exports easier, a common assumption would be that these scores have a direct impact on exports.
For this study, we have used the reports from 2015 and 2019, with a special focus on the details of one parameter i.e., Trading across borders. The particular parameter' scores represent the cost, time and documentation requirements a mid-sized company would incur/face while exporting or importing goods from/in the country.
Key Words: Export Performance, ease of doing business index, trading across borders, World Bank.

Introduction

The literature linking ease of doing business scores, entrepreneurship & local regulations with economic growth, GDP & other economic indicators, is constantly growing. For example, Adepoju, U. (2017), Ease of Doing Business index from world Bank is found to be having a role in economic growth. Also it becomes important to mention here that the effect was not found to be constant and the study concluded that the effect varied across the groups of countries. This was proved in research by Adepoju, U. (2017). An older version of the data from Doing Business was used by Klapper et al. (2006), where it was observed how high-cost entry regulations impacts negatively on the number of firms created in a country. A similar study was conducted by Barseghyan (2008), where it was proved that Doing Business' computed high-entry cost usually has a negative impact on total factor productivity. A recent study (2021) by Karl Wahen & Tamanna Adhikari, strikingly found aninverse relationship between improved ranking in Ease of Doing Business index and the Gross Domestic Product of a country.

As it is generally assumed that a positive change in the score in the Ease of Doing business index leads to building of entrepreneurship culture in a country, which in return leads to additional economic benefits. Through this paper we attempt to add to literature by studying the effects that friendly/ favourable business regulations (depicted by the score in Ease of doing Business Index) in general, and particularly in terms of international business, has on the Exports performance of a country. We approach to the study with simple questions. Firstly, is there any overall impact on exports performance of country due to the scores of *Trading across borders* as given by Ease of Doing Business report? And secondly is there a specific impact of a positive variation in Ease of Doing Business score, specifically in the 'Trading across borders' parameter (reforms relaxing the procedure) of a country associated on the exports performance of that country? While increased number of domestics firms may be an extremely important factor, change in exports can be a result of several other factors like increased investment in the domestic firms, increased expenditure by the government and more.

This study empoys the data from World Bank's Ease of Doing Business to capture the Business environment of countries. The data in this particular report undertakes a very broad range of parameters focusing on the regulatory procedures a firm needs to follow in a country. There are many studies with evidence depicting economic benefits associated with an improvement in the index as well as its individual parameters. For instance, Djankov et al. (2006) and Gillanders and Whelan (2010) proved that a better performance in ease of doing business impacts positively on the growth and development. Also effect of time delays was found on trade by Djankov et al. (2010).

Ease of Doing business considers a number of parameters, out of which 'Trading Across Borders' is the one which deals with the regulations and procedures relating to exporting goods in a country. There are studies associating it with FDI and International business but not specifically with exports performance of a country. This study aims to find answer to the question discussed above. Does improving a score in a parameter translates in better export performance?

Ease of Doing Business and Trading across Borders

The measure for ease of doing business is created and provided by World Bank's Doing Business project, which we have used particularly for 'Trading across borders. The project scores not only the business regulations a country but also the administrative and legislative obstacles, capturing requirements as well as practice. The project collects data from legal practitioners as they are the people who regularly experience these regulations in real life.

For this study we have used the reports from 2015 and 2019, with a special focus on the details of one parameter i.e., Trading across borders. The scored represents the costs, time and difficulties a mid-sized company would incur while starting a business, dealing with construction permits, while registering property, getting credit and so on. These parameters further have indicators like cost, time, documents required etc.

Literature Review

The *Ease of Doing Business Index* (EDBi) is a source of reliable information for legal part of the external business environment of 190 countries.

Considered as a dependable source for information, it is used for a number of international reports (for instance, World Competitiveness Yearbook, the Index of Economic Freedom). It helps researchers in explaining the investment decisions, also its outcomes are constantly monitored by national governments as well as many public bodies and even by international organizations like OECD or the European Commission (Djankov, 2009).

The academic relevance of the parameters covered in the EDBI was displayed in many studies undertaken by Simeon Djankov and is also reiterated by the literature on FDI. He addressed the impacts of legal system (Djankov, La Porta, Lopez-de-Silanes & Shleifer, 2002a), regulation on firms' entry (Djankov, La Porta, Lopez-de-Silanes & Shleifer, 2002b; Djankov, 2009), regulation of labor markets (Djankov, La Porta, Lopez-de-Silane, Shleifer & Botero, 2003), time costs on trade procedures (Djankov, Freund and Pham, 2006), creditor protection via legal systems and the information sharing institutions (Djankov McLiesh & Shleifer, 2007), corporate taxes (Djankov, Ganser, McLiesh, Ramalho & Shleifer, 2008a), contracts on debt enforcement (Djankov, Hart, McLiesh and Shleifer, 2008b) and on investors protection (Djankov, La Porta, Lopez-de-Silanes and Shleifer,2008c). In fact the parameters have also been connected with culture in a few pieces of literature (S Nisa, R Saini, 2019).

Entrepreneurial initiatives and activities are a support to an economy's growth. Entrepreneurship is a basic requirement for long term enthusiasm in the modern day market economy, together with higher entry rate of businesses, it can result in competition and innovation (Klapper & Love (2010).

The entry of new firms leads to creation of more jobs, thus contributing in the development of both private sector and economic growth (http://www.doingbusiness.org).

In case of informal sector, there is a lack of access to opportunities and regulatory protections provided by laws, but even some formal sector firms might not have enough access to those opportunities and legal protections (http://www.doingbusiness.org).

Doing business was an original work of Simeon Djankov. He gave insights in his study "The Regulation of Entry" the indicators of Doing Business. As a study of Klapper and Love (2010) mentions, a methodology wherein the effectiveness of regulatory framework was measured for a firm's registration, was developed by Djankov, La Porta, Lopez-de-Silanes, & Shleifer.

Beginning with 2003, the World Bank's annual 'Doing Business' report has been using this methodology for quantifying the registration process of over 190 countries.

Table: Doing Business Reports from 2007 to 2017

Sr. No.	Year	Title
1	2019	Training for reform
2	2018	Reforming to create jobs
3	2017	Equal Opportunity for All
4	2016	Measuring Regularity Quality and Efficiency
5	2015	Going Beyond Efficiency
6	2014	Understanding Regulation for Small and Medium Size Enterprise
7	2013	Smarter Regulations for Small and Medium size Enterprise
8	2012	Doing Business in a More Transparent World
9	2011	Makin a Difference for Entrepreneurs
10	2010	Reforming through Difficult Times

11	2009	Comparing Regulations in 181 Economies
12	2008	Comparing Regulations in 178 Economies

Source: Author compiled list from doingbusiness.org

Asian continent is the fastest growing region in terms of economic growth and also the largest continental economy in terms of GDP & PPP in the world.
The World Bank's Doing Business Report uses several criteria in scoring and ranking ease of doing business:
a) starting a business,
b) getting credit,
c) protecting investors,
d) paying taxes,
e) trading across borders,
f) enforcing contracts, and
g) resolving insolvency.
Other dimensions studied by the World Bank (not used in rankings) include —
(a) employing workers and
(b) entrepreneurship.
There are others studies the relationship between EDB indicators and other important concepts like as productivity, corruption, governance, FDI and so on.

Hypothesis

To find the answer to the research question which is, 'Does the improvement in the 'Trading across border' score translates into higher exports in a country?' required hypothesis was developed. As an approach (better defined in the next part of the paper) the study was designed to be a study of comparison between the export performance of the countries with improved scores on the said parameter of the Ease of Doing business and the countries with no or negligible improvement on the same parameter. Accordingly, the following sets of hypotheses were developed.

Set A.

H_0 : There is no significant relationship between the changes in the exports performance of a country with the changes in the score on the Trading across borders parameter given by the World Bank in the Ease of Doing Business index.

H_1 :There exists a significant relationship between the changes in the exports performance of a country with the changes in the score on the Trading across borders parameter given by the World Bank in the Ease of Doing Business index.

Set B.

H_0 : There is no significant difference between the export's performance of countries with improved scores on 'Trading across border' and the countries with no such improvement on the same.

H_1 : There is a significant difference between the export's performance of countries with improved scores on 'Trading across border' and the countries with no such improvement on the same.

Research Methodology (Hypotheses testing and results)

In order to answer the questions discussed in the introductory part of the paper, the first thing we needed is quantitative data. As the data required had to be accurate and highly reliable, secondary data from World Bank's 'Ease of Doing business Index' and 'World Development Indicators' is used in this study.

Initially all the 190 countries studied by the "Ease of Doing Business Index" were studied and the particular scores relating to the 'Trading Across borders' were gathered for the period of 2016 to 2019. As the methodology for scoring the countries on the 'Trading across border' (henceforth referred to as 'TAB') was refined in 2015, the years prior to that were removed for a fair comparison between the scores.

For the testing of **Set A**'s hypothesis, the data was compiled year-wise and the variables included were the overall score on TAB as well as 4 sub parameters of TAB relating to exports, namely:

- Time to export: Documentary Compliance (hours)
- Time to export: Border Compliance (hours)
- Time to export: Documentary Compliance (USD)
- Time to export: Border Compliance (USD)

It must be noted here that TAB has similar sub scores for Imports as well, which were intentionally excluded as they do not relate to the scope of the study.

In the next step, all such countries having 0 constantly on any variable or missing data for exports corresponding to any of the year from 2016 to 2020 were removed from the list. After doing so we were left with 118 countries with all the quantitative scores and data available for analysis. Now the problem was that the exports performance of one country can not be compared with another in the absolute values, to rectify this and to make this data comparable, all the variables were converted into percentage change. The final data had the following heads.

Economy	Year	Score	TimeD	TimeBC	CostD	CostBC	Exports

Here Score depicts the percentage change in TAB score of a country calculated as:

$$\frac{(\text{Score of the year} - \text{Score of previous year})}{\text{Score of previous year}} * 100$$

Similarly the percentage changes for all the variables were calculated. Here we must point out that the percentage change in these variables for year 2017 were calculated on the basis of 2016 score and as a similar base for 2016 was not available due to the change in methodology by World Bank, the final time series data shows data for each country from 2017 to 2020.

As the data for analysis is Panel data as it is both, a time series data as well as cross sectional one. Panel Data analysis was used to test the Seat A hypothesis.

The package plm was used to execute the Hausman Test in order to choose between Fixed effect model vs Random Effect model.

The hypotheses for Hausman test are:

H0: Random effects model is consistent.

H1: Fixed effect model is consistent.

The result of Hausman Test:

data: exports ~ Score + TimeD + TimeBC + CostD + CostBC
chisq = 2.7618, df = 5, p-value = 0.7366
alternative hypothesis: one model is inconsistent

As the p-value is greater that 0.05, we failed to reject the null hypothesis of the Hausman test and the Random Effect Model was found to be consistent with the data.

The same plm package in RStudio was used to execute Panel data analysis with Random effect model.

A. Result

```
Coefficients:
             Estimate Std. Error z-value Pr(>|z|)
(Intercept)  2.812986   0.987203  2.8494 0.004379 **
Score       -0.089505   0.114007 -0.7851 0.432407
TimeD        0.062357   0.091382  0.6824 0.495001
TimeBC       0.053812   0.108368  0.4966 0.619494
CostD       -0.055446   0.147510 -0.3759 0.707009
CostBC       0.007440   0.113908  0.0653 0.947922
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0
```

As can be seen in the output above, no independent variable seems to have any significant impact on exports (dependent variable).

So far, we have established that the changes in these scores do not impact the general export performance of a country.

But there is still a possibility that if we study these figures into fragments i.e. in smaller units, it might give us some insight.

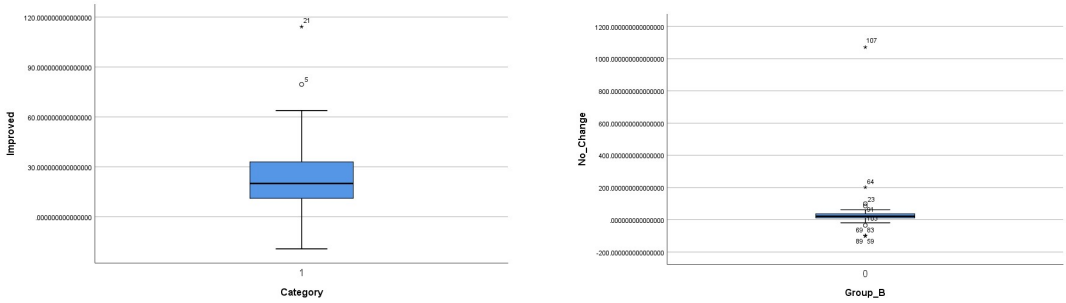
Therefore, the next set of hypothesis comes into picture and we divided the countries into two fragments here. This makes it not a county-to-county comparison, but a group of countries score against another group.

We started similar to the previous quest, we tried compiling the annual exports of all these 190 countries from 2015 to 2019 from the official website of World Bank. Here it must be noted that 2020 was intentionally excluded due to the impact of COVID19 and lockdown on the exports of many countries. Including the exports of 2020 would not have been a true representative of the true picture. Due to the unavailability of export data for some countries (even if data for any one year was unavailable), 19 countries were excluded from the study (Refer to Annexure 1). Thus, we were left with 171 countries (annexure 1) with all the data we required for our hypothesis testing.

Next, the difference as well as the percentage change in the TAB score of each of these countries from 2015 to 2019 was calculated. This was done since as per the ‘Doing Business’ methodology. As per the official methodology only if the update leads to a change of at least

0.5 points in the scores and a change of at least 2% on the score gap (relative), it is considered as a reform. These two calculated values helped us categorise the 171 countries into two groups.
Group 1: Countries with a percentage change of more than 2 % and difference between the two score equal to/ more than 0.5.
Group 0: Countries with a percentage change in the TAB score of less than 2% and difference smaller than 0.5.

Here another important thing to mention is that we have used the threshold only to classify these countries into two groups, one depicting improvement in the TAB score and another depicting no/ little / negative improvement in the TAB score. Otherwise, this threshold holds no other meaning here as the comparison is not between two consecutive years.
Further, as we had the exports values of these countries in Billions of US $, a direct comparison of these numbers was not possible as a larger economy would generally have larger exports than a relatively smaller economy, the obvious difference would not be a true comparison of the change in performance. To make the export performance of all the countries comparable to each other, the percentage change in the exports of all these 171 countries from 2015 to 2019 was computed.
Finally, before performing the hypothesis testing. The data of all the 171 economies was tested for outliers in SPSS. A boxplot for each of the group was created.



(Boxplots as generate by SPSS, for identification of outliers)

Based on both the boxplots, a total of 11 countries were further removed from the study, 2 from group A and 9 from Group B on the basis of these being outliers. Now the study focuses on a total of 160 countries (55 in Group A & 105 in Group B).

Now finally, this data of change in exports of these 160 countries was entered into SPSS and was categorised as 1 for Group A & 0 for Group B. An independent sample T-test was performed to test our hypothesis and find answer to our research question.

B. Result

The table below depicts the final data entered in SPSS. Column 1 is the category of the data where '1' represents the Group A which has the data of the countries with significantly improved scores on the 'Trading across borders' parameter of Ease of Doing business index, while '0' represents the Group B which has no/ negligible or negative change the in the score on the same parameter.

An Independent Sample T-test was conducted in the same software. Let us discuss the results of the test conducted to test the hypothesis.

Group Statistics

	Category	N	Mean	Std. Deviation	Std. Error Mean
TAB_Score_Change%	1.00	55	21.641858630018177	18.206201174134733	2.454923665515951
	.00	105	22.761467951780958	20.737443964728010	2.023767307794418

Output Table 1: As generated by SPSS on running the Independent Sample T-Test

The output table 1 provides important descriptive statistics for the groups we compared. As can be observed we compare 55 countries of category 1 with 105 countries from category 2. Here the average percentage change in exports from 2015 to 2019 for the countries with improved score in TAB is 21.641% while the same is 22.761 for those with no or negligible or even

Independent Samples T-Test

		Levene's Test		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
TAB_Score_Change	Equal variances assumed	.006	.938	-.338	158	.736	-1.119609321762780	3.313782784387785	-7.664635429895412	5.425416786369851
	Equal var			-.3	122.	.726	-1.11960	3.18155375871 7231	-7.41736	5.17814730758 1678

	ian ces not ass um ed			5 2	87 0		932176 2780		595110 7239	

Output Table 1: As generated by SPSS on running the Independent Sample T-Test

As per the output table 2, firstly, it can be observed that the significance value of the Levene's test of equality of variances in insignificant (0.939) and thus we do not reject the null of Levene's test and conclude that the variance in percentage change in exports of countries with improved scores in TAB is not significantly different from the same of no improvement in the same score.

Due to the Leven's test's result, we should focus on the 'equal variances assumed' row for the t test. SPSS reported the t value of -0.338 and a 2-tailed p value of 0.736, which is higher than 0.05.

Therefore, we failed to reject the null hypothesis that holds that there id no significant difference between the percentage change in exports of countries with improved scores in 'Trading across border' parameter of 'Ease of Doing Business Index' and the countries with no or negligible changes in the score in the same parameter of 'Ease of Doing Business Index'.

Conclusion

Since 2004, there has been amazing number of research studies depicting the benefits of improving the scores/ranking in the World Bank's Ease of Doing Business Index. Be it in terms of FDI or economic growth and development, the general belief is that an improved ranking or score achieved by bringing in regulatory reforms translates into increase spirit of entrepreneurship in the economy as well as results into various economic benefits. This study is one such study where we tried to find out the association between a better score in one of the parameters of the same index and the exports performance of an economy. As 'Trading Across borders' is directly related to making Exporting easier, a common assumption would be that these scores have a direct impact on exports.

The study compared the export performance of over 150 countries with their performance on the parameter in question and found out that there exists no such pattern. An increase in this score do not translate into higher exports. This might be a signal that increasing exports require focus to be put on other factors affecting exports than making the procedure easier.

The constant race towards achieving a better score in these parameters is not translating into a better export's performance. This is also supported by the finding that the average percentage change in the countries with no or negligible improvement in the score on 'Trading across border' parameter is in fact slightly higher than the other group.

No doubt that bringing in reforms to make regulations easier is always a welcome step, but the research supports that increasing exports is not one of its outcomes. Export promotion is an important economic requirement and an area of focus for government of any country. The findings of the study suggest to not consider an improvement in the score of this parameter as a measure for the same and focus on other steps for promoting exports.

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